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ABSTRACT

The context of this evaluation is described in terms of locale organization, financial status & enrollment trends of the school system. Special factors such as needs assessment and historical background of the district are described as well. CPMP is explained in detail by covering its scope, objectives, personnel required and procedures used to implement the program. Results of the evaluation, which involved pre and post testing of students in the new curriculum compared to control students, led the investigators to conclude that those students in CPMP showed greater growth than controls. On the basis of these results, principals and other administrators felt that such student progress justified recommending CPMP for adoption in the Aurora Public Schools. An appendix describing the program, student and teacher evaluation instruments is included. (ROF)

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EVALUATION OF CPMP
(Grades 6-12 Continuous Progress Mathematics Program)
1972-1973

by
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TM 003 388

Title III ESEA
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SUMMARY

The Continuous Progress Mathematics Program (CPMP) in the Aurora Public Schools had four main objectives in 1972-73:

1. To re-organize the present secondary mathematics program in the Aurora Public Schools into a non-graded, continuous progress program with emphasis on diagnosis, prescription and implementation for fulfilling individual needs.

2. To retrain teachers, counselors and administrators to meet the objectives of this mathematics program in the cognitive, affective and psycho-motor learning domains.

3. To adapt present facilities to meet the physical and academic instructional needs of the program.

4. To evaluate the non-graded continuous progress program.

During the week before pre-planning, pre-planning week, and the first and second semester, project teachers received inservice training in the operation and organization of a CPMP. The inservice courses were conducted by a mathematics specialist from within and one from without the school district. The participants received 3 hours of college credit for each course attended. The courses included study of CPMP theory and research, diagnostic tests, specific skill objectives, and different teaching strategies.

The program students were regrouped so that they could receive individual attention part of the time and be in a small or large group the rest of the time. A wide variety of teaching techniques and creative teaching materials were used to accomplish CPMP objectives.

The State Title III office sent a team of three outstanding people in the area of mathematics education to evaluate the CPMP. The following comments are from the evaluation team:

> The on site evaluation was initiated with a general procedures meeting with the team members on purposes and procedures for the visit. This was followed by a project overview.
>
> An excellent on site evaluation document had been prepared by the project staff indicating evaluation procedures and data, dissemination procedures, and future plans. This was of great help to the team and they expressed several compliments regarding the care and effort that had been made preparing for the on site visit.
>
> The overview was highlighted by a short tape-slide presentation, comments by project teachers from participating schools and general discussions. The tape-slide production was particularly well done.

The team visitation on Thursday, March 15 included visits to North and West Junior High Schools, St. Pius School, and with Central office Administrators.

A post visit verbal summary with the project staff marked the final activity of the team.

All members of the team were appreciative of the preparations for the visit by the project staff. The care and attention to the pre-visit information and the on site evaluation booklet indicated the extremely high committment to the project that the team feels the project staff possesses.

The overall reaction of the team was very positive concerning the degree of committment by the staff, the willingness to tackle a difficult assignment of changing an entire secondary mathematics curriculum and the amount of time and energy that the staff and the teachers are exerting into the project effort.

Science Research Associates (SRA) did all academic testing and analysis of the CPMP.

The project is very pleased to report that significant amounts of growth were made during the year. 275 randomly selected students were used for pre and post testing of the CPMP. Three different Junior Highs were used as the experimental schools and two Junior highs as the control schools.

The experimental schools did show a greater amount of growth in the eight month period than did the control schools. Average gain for the experimental schools was 1.9 years growth during the eight month period and 1.3 years growth for the control schools for the same period of time.

Principals and other administrators were very pleased with the progress made by the participating teachers and students. The program's success justifies the recommendation that the Continuous Progress Mathematics Program should be implemented in the Aurora Public Schools.

DESCRIBING THE CONTEXT

During the 1970 school year mathematics teachers in Aurora were contacted by Mr. Bill McCurley, District Mathematics Consultant, regarding a Continuous Progress Mathematics Program. Eight educators, one administrator, two consultants (one in vocational education and one in the area of mathematics education), and five district mathematics teachers were asked to serve as the steering committee for a Continuous Progress Mathematics Program.

These educators submitted a letter of intent for a CPMP to the State Department of Education. This letter received encouragement and a Continuous Progress Mathematics Program proposal was written.

Although the idea started from one man, teachers, counselors, administrators, lay people, students, and citizens in the district were contacted regarding the program and their ideas were incorporated into the project.

THE LOCALE

Population and Economic Patterns of the Locale

Aurora, Colorado is a city of 105,000 people which covers parts of two counties (Adams and Arapahoe) and is bound on three sides (west, south, north) by the City and County of Denver and is served by two public school systems (Aurora Public Schools and Cherry Creek Public Schools).

The Aurora Public Schools serves some 19,000 students and has an annual operating budget of $19 million.

The district presently operates 20 elementary, 4 junior and 2 senior high schools, and a vocational-technical center. The school system employs a staff of 1,500 people including 915 certified teachers.

Construction is under way on a $5.5 million high school and a $2.5 million middle school which will be ready in the fall of 1973.

With the opening of the two new secondary buildings in 1973 the district will begin a three-year transition from a 6-3-3 grade structure to a 5-3-4 grade organization. When completed in the fall of 1975 the new grade organization will be: elementary, kindergarten through grade 5; middle school, grades 6 through 8; and high school, grades 9-12.

The assessed valuation of real property situation in the 124 square miles which comprise the Aurora School District has changed from a 1961 figure of $70 million to a 1973 figure of $131 million. The assessed valuation is projected to reach $192 million by 1981. The county treasurer for both counties advised that the average home in Aurora is valued at $15,500. Additionally in Aurora, there are presently 2,152 trailers and 9,412 apartment units.

The community does not have any industrial base to speak of and businesses located in the area are generally of the retail sale or service variety.

The major military hospital, Fitzsimons General Hospital, is in the community, and Lowry Air Force Base joins the city on its western boundaries.

As a result some 6,000 of the Aurora school children are from families whose parents are associated with the military service or work for the federal government.

Being part of the Denver Metro Area, Aurora residents have easy access to the following institutes of higher learning: Temple Buell College, Loretto Heights College, Regis College, Denver Community College, Metro State College, Arapahoe Junior College, Denver University and the University of Colorado.

Cultural benefits are provided by numerous programs brought in or presented by the area's higher educational institutions, as well as frequent touring groups and/or road shows. On a regular basis the area is served by the Denver Symphony Orchestra, a truly outstanding Museum of Natural History and the Denver Art Museum.

The Aurora Public Schools offer several co-op programs with Colorado Colleges and Universities which can be taken for enrichment or for undergraduate or graduate credit. The classes are conducted at a variety of district facilities.

THE SCHOOL SYSTEM

Organization of the School System

The Aurora Public Schools has 20 elementary schools and eight secondary schools. There are approximately 20,000 students enrolled in the school district.

A. Enrollment and Participation Data

		Pre-School	K-6	7-12	Out of School	Total
1. School enrollment in project area	a. public	191	10728	8015	271	19205
	b. non-public		590	215		805
2. Pupils participating directly[1] in project	a. public		350	4800		5150
	b. non-public			125		125
3. Pupils participating indirectly[2] in project	a. public					
	b. non-public					
4. Teachers participating directly[1] in project	a. public		3	37		40
	b. non-public			3		3
5. Teachers participating indirectly[2] in project	a. public					
	b. non-public					

Definition of Terms:

1. Direct Participation - Enter the number of different persons participating in activities involving face-to-fact interaction of pupils and teachers (in case of inservice training, teachers and instructors) designed to produce learning, in a classroom, a center or mobile unit; or receiving other special services.
2. Indirect Participation - Enter the number of different persons visiting or viewing exhibits, demonstrations, museum displays; using materials or equipment developed or purchased by the project; attending performances of plays, symphonies, etc.; viewing television instruction in a school, a center, or home; or participating in other similar activities.

B. Total number of participants by ethnic groups:

Anglo	Black	Hispano	Oriental	Other (specify)	Total
865	9	87	101	Puerto, Eskimo 2	1,064

Financial Status of the School System

The financial history of the Aurora Public Schools has been from a mill levy of 48.90 in 1964 to 86.26 mills in 1973. Our General Fund Budget in 1973 is $19,021,898.00. This amount of money puts the per pupil cost at $876.00. This amount is above the average per pupil cost in the State of Colorado.

Enrollment Trends of the School System

The Aurora School District is situated in one of the most rapidly growing areas in the state and based on data available from an intensive community study, done by the City of Aurora, employing an outside consulting firm and data given by the school district from home builders and developers, indications are that the student population will double in the next five years. It is anticipated that student population will increase some 1,200 to 1,500 next September and as much as 7,000 the following September. At the same time, the population within the community maintains a high degree of mobility within and without the school district, and some schools report as high as 100% student turnover.

ANALYSIS OF LEVIES AND BUDGET TOTALS

Year	Dist. Gen. Fund levy Mills	County Public School levy Mills		Bond & Int. levy Mills	Cap. Res. levy Mills	Average School levy Mills		Assessed Valuation	General Fund Budget	Bond & Int. Budget	Cap. Res. Budget
		Adams-Arapahoe				Adams-Arapahoe					
1964	24.50	12.23	13.588	10.50	1.00	48.23	49.58	84,446,274	6,878,377	1,035,312	89,980
1965	29.40	13.28	13.698	10.90	2.00	55.88	55.99	87,860,381	7,924,454	1,125,570	191,282
1966	27.40	12.84	13.751	10.20	2.00	52.44	53.35	88,935,772	8,875,729	1,318,167	192,890
1967	30.10	13.28	13.698	10.20	2.00	55.58	56.00	92,678,133	9,647,719	1,363,000	199,951
1968	31.06	13.17	13.72	8.3	2.00	54.53	55.08	94,298,120	10,697,957	1,513,552	208,937
1969	32.86	13.65	14.171	9.8	2.00	58.31	58.831	98,167,493	11,456,324	1,560,296	215,045
1970	34.86	17.00		12.1	2.00	65.96		100,922,516	13,710,407	1,836,366	521,315
1971	47.08	17.00		10.0	2.00	76.08		105,716,082	14,956,641	1,822,659	481,843
1972	55.08	17.00		10.0	2.00	84.08		114,576,215	16,498,937	1,994,892	819,502
1973	57.26	17.00		10.0	2.00	86.26		131,418,130	19,021,898	2,560,720	349,698

The present Foundation Act allowing the same levy in each of the counties of Adams and Arapahoe came into being in 1969.

SPECIAL FACTORS

Needs Assessment

The district has used the Iowa Tests of Educational Development for the past few years. 1171 mathematics students were tested in 1970 and the average of these students fell in the 49th percentile. It was felt that there was a definite need to improve the present mathematics program. In the spring of 1971-72 the idea of a Continuous Progress Mathematics Program (CPMP) was born. In the winter of 1972 a steering committee was formed and a Title III proposal written for a pilot study at West and North Junior High Schools.

FIVE YEAR CALENDAR FOR THE CONTINUOUS PROGRESS MATHEMATICS PROGRAM

Spring 1971	The idea for a Continuous Progress Mathematics Program (CPMP) was formulated
Fall 1971	Idea presented to teachers during pre-planning conference
Winter 1972	Idea and proposals presented to secondary principals, Director of Secondary Education, Director of Instruction, Council for Instruction (twice), the Superintendent and the Board of Education
	Steering Committee formed and Title III proposal written for pilot study at West and North Junior High Schools for a CPMP
Summer 1972	Writing team wrote and adapted materials
School Year 1972-73	Implementation of pilot program at West and North Junior High Schools
Spring & Summer 1973	Revision of CPMP materials
	Introductory inservice workshop for participating teachers in district prior to opening of school
School Year 1973-74	Expansion of CPMP to Hinkley and Central High Schools (partial implementation) and full implementation of CPMP to Gateway High School and Aurora Hills Middle School
	On going inservice toward better ways of implementation of CPMP and continual revision of materials
	Concentrated effort to establish mathematics learning centers (math labs) in participating schools

Spring 1974	Recommendation to Board of Education for full implementation date of fall 1975
	Final revision of CPMP materials
Summer 1974	Inservice for all mathematics teachers in the CPMP
Fall 1974	On going inservice for teachers in CPMP and adaptation of supplementary material to aid the CPMP
Spring 1975	Inservice for all mathematics teachers in district
School Year 1975-76	Full implementation of CPMP throughout School District and on going inservice
Summer 1975	Final adaptation of CPMP materials
August 1975	One week inservice prior to opening of school for all mathematics teachers, preparing for full implementation in September, 1975

Historical Background

The mathematics program prior to the CPMP was traditional and operated in a similar manner to many school districts throughout the State of Colorado. A student would begin a mathematics course in September and at the end of May or the early part of June should have completed all course requirements. Then the question arose . . .'Do all school students learn at the same time and rate?' . . . thus the CPMP was born.

EXPLAINING THE PROGRAM

Scope of the Program

During the ferment of change in mathematics education, individual differences have only been talked about; educators, for at least fifty years, have been told to take care of these differences but never how. The program as proposed in this application will develop a model to accommodate the needs, abilities, and interests of the individual in a 6th - 12th grade level mathematics curriculum by implementing a highly individualized non-graded, continuous progress program. The offering will be organized and coordinated at the district level, creating and implementing new learning materials. In this continuous progress program, students will advance according to their abilities and needs in the cognitive, affective and psychomotor learning domains. Through a problem-solving process, a move to fulfill students' needs for understanding the relationships mathematics has to other educational disciplines, as well as the relationships between mathematics and the world at large will be accomplished.

This individualized program will improve learning practices through diagnosis of individual pupil needs, prescription, and implementation for fulfilling those needs. Evaluation will be accomplished through the use of Curriculum Embedded Tests identifying mastery of a group of related objectives, and through the use of objective reference tests showing mastery of these objectives. Those students who are two grade levels below normal grade level will be identified and placed in the COLAMDA Mathematics Program.

This program would eliminate traditional grade level organization and allow each participant to move through the curriculum according to his needs, desires, and abilities with emphasis on differing achievement patterns.

The program would meet the needs of the transient nature of Aurora residents. A thirty percent pupil turnover each year in Aurora Schools causes considerable problems in placement of entering students. This has resulted in a growing dissatisfaction with the rigidity of present programs, which prevents students from entering and leaving the program with a minimum of difficulty.

There is considerable pressure on public schools to better utilize teacher time and facilities. Increased utilization of teacher abilities, time and classroom space will be facilitated in the project by improved skill objectives of 6th - 12th grade level mathematics continuum, and development of a teacher-training model. This model will be designed to retrain teachers, counselors and administrators to meet cognitive, affective and psycho-motor learning objectives of this individualized continuous progress program.

The continuous mathematics program is innovative in that it:

a. Allows a student to proceed through mathematics at a rate of speed determined only by his needs, desires, and abilities.
b. Eliminates the present rigid system which does not compensate for problems associated with highly mobile populations.
c. Takes into consideration individual student-growth patterns and allows students to proceed as far as they can in mathematics at their own rate of speed, thus replacing the traditional grade level and prescribed time course.
d. Adopts to twelve month and summer school programs.
e. Makes existing teaching space more flexible.
f. Provides for team organization of teachers, team planning, coordination and implementation.
g. Provides more thoroughly for student mathematical needs in other educational disciplines.
h. Defines curriculum through concept and performance objectives instead of course titles and units.
i. Provides for diagnosis, prescription and placement of participating students.
j. Provides for flexible groups.
k. Provides for a student's entry into, departure from, or relocation in the mathematics sequence at times to fit student goals and plans.

procedures for more detailed information.

1972 Mission Profile

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1973
Inservice training for curriculum teams.												
Reviewing, organizing and developing curriculum materials.												
Planning for summer inservice.												
				Inservice training for teachers administrators, and counselors (college classes, workshops, visitations and seminars) Develop Initial Evaluation Materials								
								Diagnosis, prestription and placement of students				
				Program evaluation -- Continuous feed-back sessions involving teachers, counselors, students, and administrators.								
					Teachers involved in teaching							
							Building renovations for pilot schools					
Identification of project schools												
Identification of project teachers												
Student Involvement												
Community Involvement									Expansion of Evaluative Procedures			
									Implement Dissemination			

OBJECTIVES
(General and Specific)

1. To re-organize the present secondary mathematics program in the Aurora Public Schools into a non-graded, continuous progress program with emphasis on diagnosis, prescription and implementation for fulfilling individual needs.

   a. Student Objective - Each student will work and progress according to his own individual learning rate in a multi-media program starting in the sixth grade and continuing through the upper levels of the high school curriculum.

   Staff Objective - To implement an open - ended multi-media, and an individualized program to compensate for different learning rates.

   b. Student Objective - Each student will stay in the program at least long enough to satisfy the requirements for high school graduation.

   Staff Objective - To develop a program which will encourage each student to continue in the mathematics program until high school graduation requirements have been met.

   c. Student Objective - A student transferring into the system (Aurora has a 30% turnover rate per year, largely military) will enter the program at his demonstrated achievement level.

   Staff Objective - To better meet the needs of the inherent transient military population in Aurora, (30% pupil turnover rated per year).

   d. Student Objective - Each student will apply mathematics to other educational disciplines and to the world at large from a problem-solving approach.

Staff Objective - To apply mathematics to other educational disciplines and to the world at large from a problem-solving approach.

e. Student Objective - Each student will continuously progress, using existing materials adopted to this program, as well as newly prepared materials.

Staff Objective - To adapt and utilize new and existing materials to meet the needs of the district in a continuous progress program.

f. Student Objective - Each student will actively participate in the mathematics program through freedom in the use of independent and group learning centers and multi-media.

Staff Objective - To provide for full student participation by allowing each student freedom in the use of independent and group learning centers and multi-media.

g. Student Objective - Each student will demonstrate his progress on a performance criteria basis.

Staff Objective - Development of student progress evaluation based on a performance criteria: (cognitive, affective and psycho-motor).

h. Student Objective - Each student will follow a progressive, sequential, and yet flexible schedule in using the mathematics area.

Staff Objective - To develop a model for scheduling students into and out of the mathematics area.

2. To retrain teachers, counselors and administrators to meet the objectives of this mathematics program in the cognitive, affective and psycho-motor learning domains.

a. Teacher Objective - Each teacher will be teaching in the areas of mathematics in which his greatest strengths have become evident.

Staff Objective - To develop teaching strategies for better utilization of teacher time and talents.

b. Counselor and Administrator Objective - Each counselor and administrator will be familiar with the mathematics program in order to assist students in adjusting to the program.

Staff Objective - To develop a model for orienting counselors and administrators to their role in the program.

3. To adapt present facilities to meet the physical and academic instructional needs of the program.

a. School Building Objective - Present buildings will be renovated to accommodate open-space learning centers, independent study areas, testing centers, teacher work areas, and storage areas.

Staff Objective - To renovate present buildings to accommodate open space learning centers, independent study areas, testing centers, teacher work areas and storage areas.

b. Student Objective - Each student's records will be recorded and available in the retrieval system of the district owned computer.

Staff Objective - To adapt present district owned computers to accommodate a pupil record retrieval system.

4. To evaluate the non-graded continuous progress program.

a. Staff Objective - A model will be developed for evaluating the program based on student performance and progress.

PERSONNEL

Classroom Personnel

The CPMP involved theuse of 19 classroom teachers from two junior high schools in its first year of operation, 16 from the Aurora Public School system and three from the two parochial schools in the area. Each school had the use of one or two professional aides. Teacher aides were all experienced and had the equivalence of a college education.

The 19 teachers with the help of teacher aides developed and implemented a highly individualized mathematics program.

The five teacher aides assisted the teacher with student instruction, clerical tasks in the classroom, preparation and grading of materials. The aides did eleminate many duties (correcting papers, running of ditto masters, etc.) of the teachers which allowed the teachers more time with their students.

All instructional personnel were full time mathematics teachers except one who was part-time science and mathematics. The classroom personnel served for the duration of the project, with very infrequent absences and through their hard and devoted work made the CPMP successful.

Administrative Staff

The project director has had 28 years of experience in the field of education and 15 years in Aurora Public Schools; first as a classroom teacher and for the past 7 years as District Mathematics Consultant. He assumed the responsibility for general project operation and fulfillment of objectives, recommendations for hiring staff, and project expenditures under grant contract. He was also responsible for production of project materials and fulfilling activities required by the ESEA Title III office. His main responsibility is to develop a model for a 6th - 12th grade Continuous Progress Mathematics Program in the Aurora School System.

The Project Associate will be responsible for designing, developing and implementing a realistic evaluation and diffusion process to assure continuation of project objectives and activities at the conclusion of Federal funding. He will also be responsible for:

1. Conducting planned meetings and seminars to disseminate materials, collecting feedback, and identifying instructional areas of concern.
2. Assisting teachers in instructional activities.
3. Assisting Project Director in meeting project objectives.

The Project Associate, Dan Colvin, has had nine years of educational experience. Six years in the classroom as a mathematics teacher, two years working on the staff of the COLAMDA Project and one year as Project Associate for the CPMP.

PROCEDURES

Organizational Details

The CPMP has been funded for two years. This report is an evaluation of the first year of the program, a project to allow students to move through a mathematics continuum at a rate desirable to his needs, abilities and desires.

Physical Arrangements

The first year of operation included three junior high schools. Little or no physical arrangements were made in two of the junior highs. West Junior High spent $9000.00 removing walls, lockers and other structures to increase the size of student, teacher and teacher aide area. Desks were replaced with tables to allow for different arrangmenets of the classroom area. Large and small groups were used throughout the school year. The other Aurora junior high schools involved in the program operated in the same manner as in previous years.

Review and Planning

The program teachers had one workshop each semester to use in gaining additional knowledge in a CPMP. These workshops gave teachers additional time for planning and further developing of their classroom activities. In some cases teachers felt this was not enough time and spent one night a week in group planning to increase the proficiency of the CPMP.

Inservice Training

A continuous progress mathematics program uses many new and different methods and materials, therefore inservice training is a necessary part to a successful program. One workshop is held each year before the start of school. In this workshop teachers are given new teaching strategies along with updated materials. This week-long workshop gives teachers time to organize their classrooms and to focus their energies toward CPMP. Once school starts the project holds one

three hour course each semester and teachers are encouraged to take the inservice if possible. These inservice courses are designed to aid teachers in small and some large group instruction and in the operation of a CPMP. Thus far they have served the project and teachers toward implementing a CPMP.

Following is an outline of proposed inservice workshops and a model for implementation.

The workshop as proposed in this application will develop a model to meet the needs of individual teachers in a 6th - 12th year mathematics curriculum by modeling a highly individualized non-graded, continuous progress mathematics program (CPMP). The workshop will be organized and coordinated at the district level. Major emphasis would be on the philosophy of a CPMP, the changing role of the teacher, creating and implementing new learning materials, creating a model for a mathematics laboratory and organization of the classroom.

Following are the goals of the workshop:

1. To introduce philosophy, materials, and teaching strategies to teachers new to the idea of a continuous progress mathematics program (CPMP).
2. To familiarize teachers with behavioral objectives and their use to meet the goals of a CPMP.
3. To assure proficiency in content skills that bring teachers to levels that enable them to be mathematically literate according to the grade level taught.
4. To set up a model classroom for implementing a CPMP.
5. To remove the fears of teachers concerning the changing role of the teacher in mathematics education today.
6. To present a model for organization of a CPMP.
7. To help teachers understand the role of the mathematics laboratory in open space and traditional classrooms.
8. To produce materials and activities to introduce and support behavioral objectives of the program.

Activities or Inservice

In developing a CPMP two types of activities were needed: (1) the physical changes for a new program, developing new materials, updating existing materials, arranging and remodeling physical plants and physically getting classrooms ready for a CPMP. (2) The affective changes that teachers and administrators need to make to make a highly individualized mathematics program successful. Making positive change is a more difficult task--if teacher attitude toward a CPMP could be changed in the positive direction, we knew the attitude of their students would also change.

The following project activities were used to facilitate both physical and affective changes.

PROJECT ACTIVITIES

I In-Service for teachers

A. In-Service Planning Phase - 1 day in April including:
   1. District Administrators
   2. District Counselors
   3. Project Teachers
   4. Project Staff
   5. Consultants
      a. College
      b. Students
      c. Citizens

B. Preparation of materials - 14 days starting March 6 including:
   1. All District teachers
   2. District representative

C. Instructional and Organization Phase - 10 days starting May 1 including:
   1. Project Staff
   2. Project Teachers
   3. District representative
   4. Student representative

D. Assessment Phase - 1 day by June 8 including:
   1. Project Staff
   2. Project Teachers
   3. District Representative

II Evaluation In-service Training - Teachers

A. In-service Planning Phase - 1 day by June 8 including:
   1. District Administrators
   2. District Counselors
   3. Project teachers
   4. Project Staff
   5. Student representatives

B. Organization, Developmental, and Preparation of District Evaluation Materials Phase - 7 days starting in June including:
   1. Staff
   2. Teachers
   3. Consultant

III Pre-Planning In-service for aides - 3 days starting in August:
   1. Project Aides
   2. Project Teachers

ACADEMIC YEAR ACTIVITIES

I Design Implementation

A. Teachers

1. Project teacher involvement
   a. Two two-day project workshop conferences, November and February.

   b. Classroom visitations (host)
      1. Teachers
      2. Principals
      3. District representatives

2. Non-project teachers

   a. Faculty meetings (departmental, etc.)
   b. Contact by project participating teachers
   c. District in-service
   d. Visitation to project schools

B. Administrative and supportive staff
1. Participating school's staff
   a. Principals
      1. Project dissemination conferences - October and March
      2. Class Visitations
      3. Project staff contact
      4. District representative contact
      5. Project teachers contact
      6. Student contact

   b. Counselors
      1. Class visitations
      2. Participating teacher contact
      3. Student contact
      4. Inter-action with principals and consultants

2. Board of Education
   a. Presentation by participating district teachers
   b. Reporting by district representative
   c. Project class visitation
   d. Display, etc.

3. Central District Administration
   a. Contact by District representatives
   b. Contact by project teachers
   c. Class visitations

4. Non-Participating School Principals
   a. Administrative council presentations, etc.
   b. Contact by District representatives
   c. Contact by project teachers
   d. Contact by participating principals
   e. Classroom visitation

II Design Development - 1 day - coincide with assessment phase at the end of First Year.

A. Staff

B. Teachers

C. General Public
   1. PTA
   2. District representatives
   3. Participating teachers
   4. Participating principals
   5. Project staff
   6. Classroom visitation

III Evaluation by Title III ESEA Office

TEACHER INVOLVEMENT

1. All project teachers will be expected to:

   a. Assist other district teachers through personal contacts, seminars, in-service sessions, workshops, etc.

   b. Edit and revise field tested project material.

   c. Develop, or continue development of project objectives.

   d. Make recommendations to writing team concerning field testing of project materials.

   e. Assist in district planning and preparation of continuous progress mathematics curriculum.

   f. Identify and prepare materials, teaching aids, and manipulative devices within framework of personalized instruction.

   g. Develop, or continue development of, a personalized instructional approach to teaching mathematics.

   h. Collect data and cooperate in project evaluation activities.

   i. Assist in district diffusion activities and long range diffusion design and implementation.

   j. Attend a summer seminar or intensive workshop.

2. In addition to the above activities, new participating teachers will be expected to attend a two day introductory workshop and/or district inservice sessions based on project objectives and activities.

3. All teachers in the district will have the opportunity to contribute to the structure and materials of the program.

DISTRICT INVOLVEMENT

1. Select potential teacher participants by March 15.

2. Select project coordinating teacher by March 15.

3. Select project schools by March 17.

4. Non-public schools in the district provide a letter of intent to participate in 1972 - 73 Continuous Progress Mathematics by April 1.

5. Provide necessary facilities, support and assistance for introductory workshop, or equivalent, for potential teacher participants by April 1.

6. Provide mininum equipment for each participating school by July 25.

7. Provide administrative support and assistance in developing continuous progress mathematics curriculum in participating schools.

8. Provide administrative support and assistance to project teacher and project staff in developing a diffusion design for continuing objectives and activities.

9. Provide for implementation of local diffusion design.

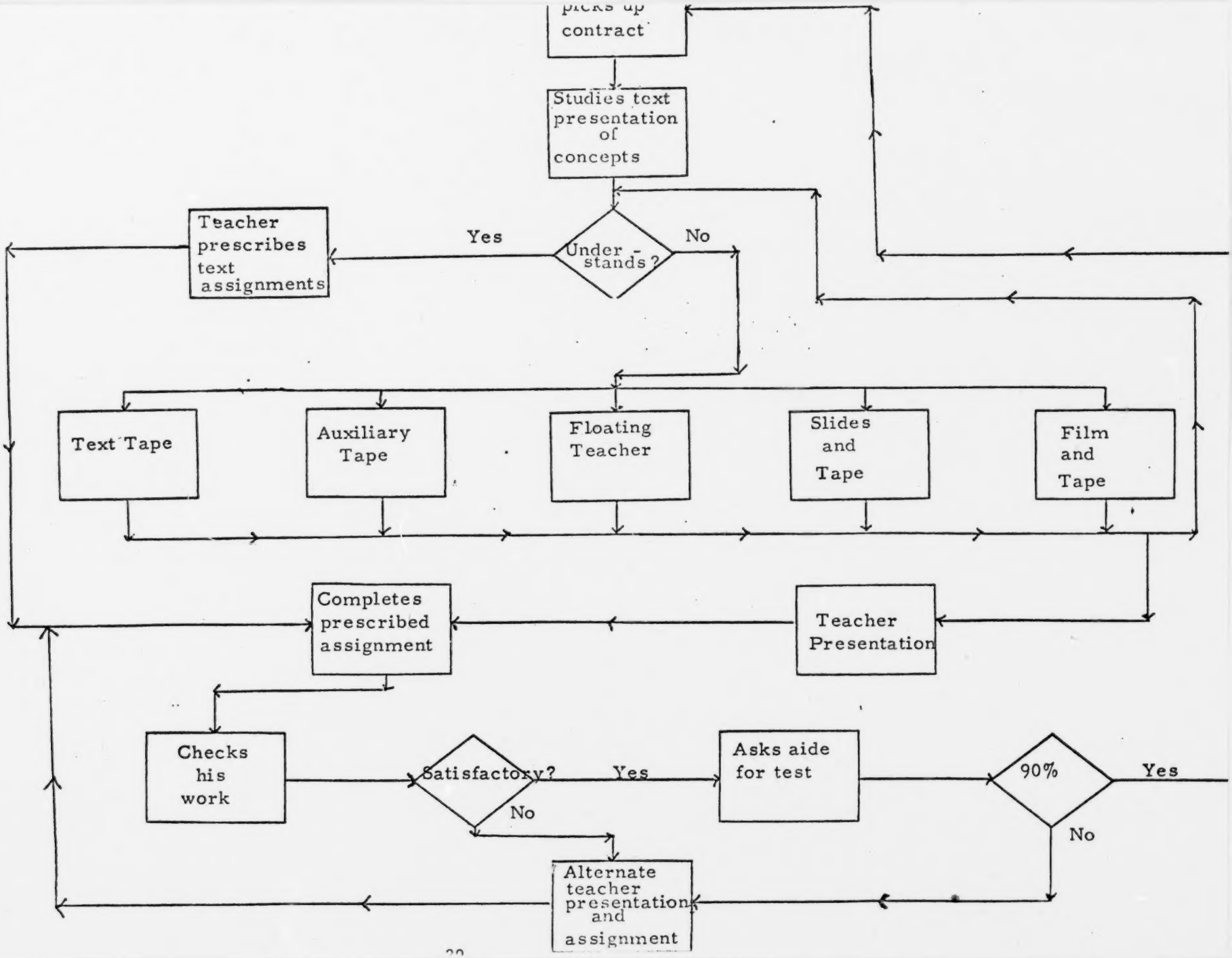
10. Assist project staff in c assroom visits to develop effective procedures for personalized instruction.

11. Assist in identification of project weaknesses and strengths.

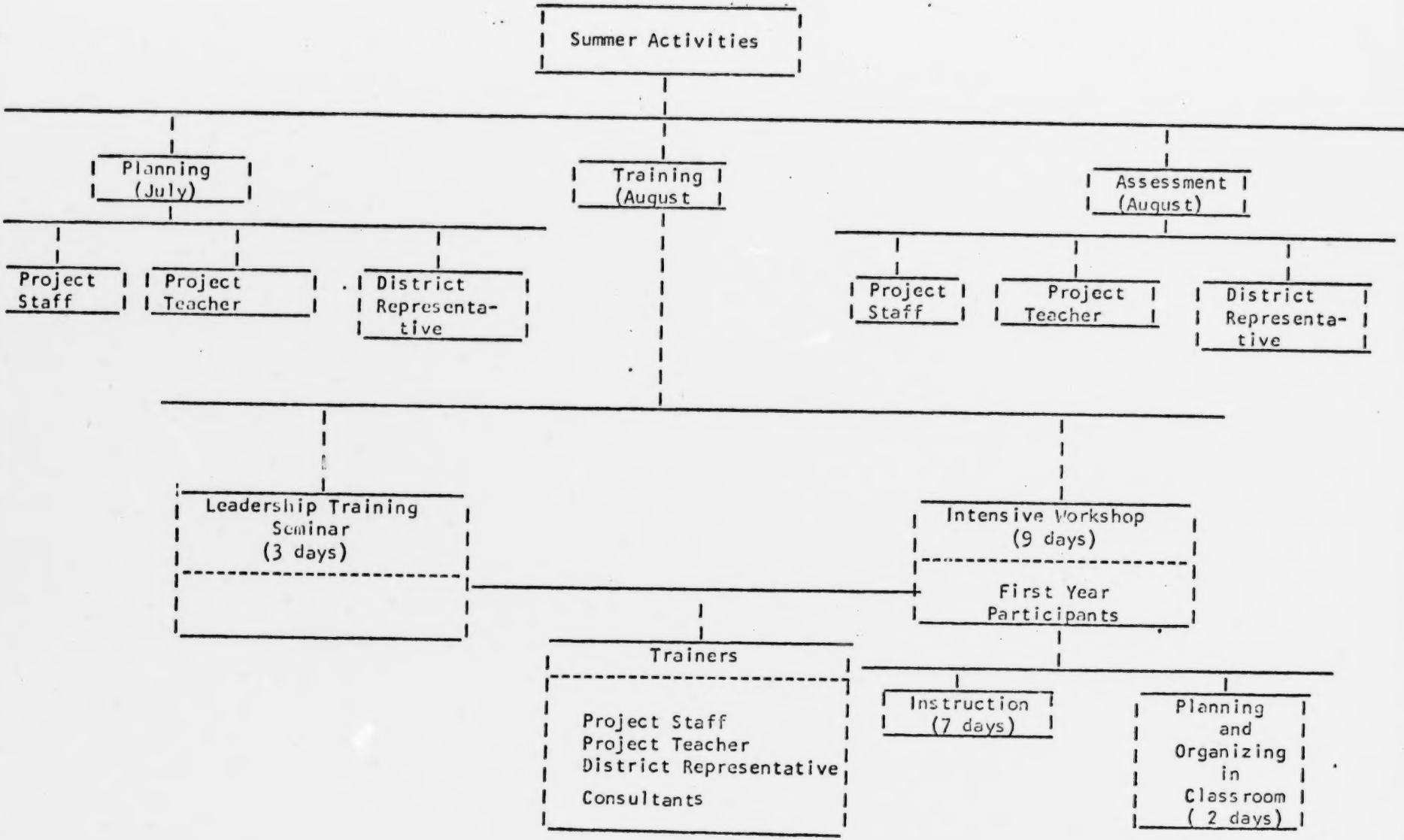
12 Provide for released time for district project teachers to attend two two-day workshops during the year to assess activities, update material, and identify roles in diffusion of this project.

13. Provide administrative support and assistance to coordinating teacher in dissemination and diffusion activities of project during 1972 - 73 academic year.

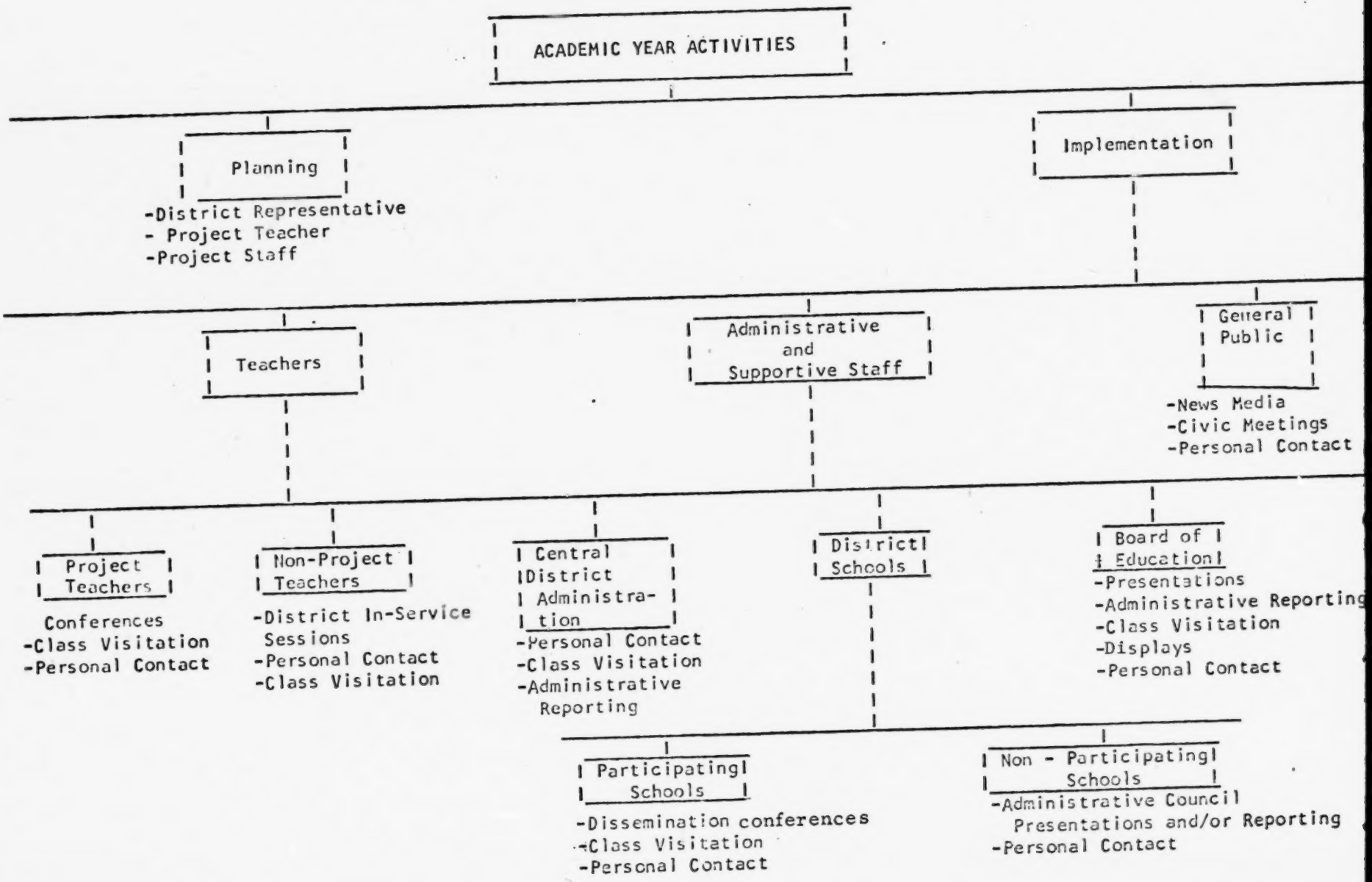
14. Provide release time for non-project teachers to visit project schools on a regular basis.


picks up contract
Studies text presentation of concepts
Under - stands?
Yes
No
Teacher prescribes text assignments
Text Tape
Auxiliary Tape
Floating Teacher
Slides and Tape
Film and Tape
Completes prescribed assignment
Teacher Presentation
Checks his work
Satisfactory?
Yes
No
Asks aide for test
90%
Yes
No
Alternate teacher presentation and assignment

DIFFUSION ACTIVITIES



DIFFUSION ACTIVITIES

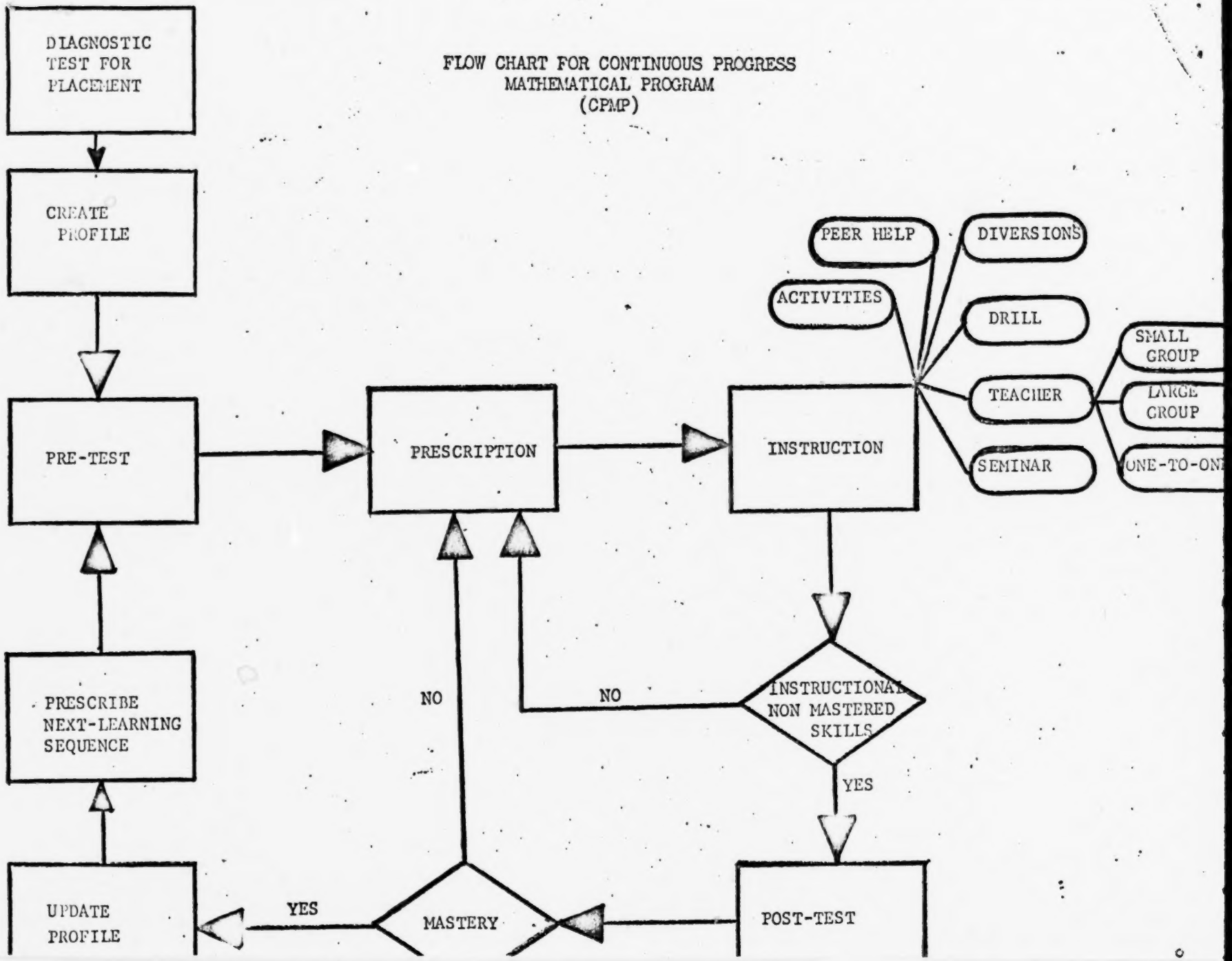


CPMP Activities and Procedures

With the aid of parents, counselors, principals, teachers, teacher's aides, and other district administrators, a successful CPMP can be successfully implemented. The following is the student operation of the CPMP:

By teacher recommendation, or testing, students are placed as close as possible to the correct spot on the mathematics continuum. This continuum contains all objectives the school district would like the student to achieve. Through many different teaching strategies, large and small group instruction, the student is allowed to progress through the continuum as fast as he can (determined by the teacher and student) and still maintain a high degree of proficiency of each objective. If our student needs additional help, it can be obtained from other teachers, other students, or teacher aides. The student is encouraged to move as fast as possible, but if extra time is needed to achieve an objective, extra time is given. The following is a step-by-step model of how the CPMP operates:

FLOW CHART FOR CONTINUOUS PROGRESS
MATHEMATICAL PROGRAM
(CPMP)



Instructional Equipment and Materials

Along with several texts,special material was developed with the aid of every project teacher. This material will be used along with several text-books to supplement and give enrichment to students in the CPMP. A big push is under way to include many different types of equipment to be used in what is called the "Mathematics Laboratory." This laboratory will contain audio-visual, motor types of equipment to help insure that a student has more than one way of achieving a given objective.

Parent-Community Involvement

The Parents

Parents were encouraged to help other children and to show interest in their children's work by asking questions and giving praise when deserved. Parents received an ouline of the program from a brochure prepared by the staff and mailed to their home. A copy of this brochure is included in an appendix to this report. Parents were encouraged to participate through their local PTA and communication lines will always be open for their comments.

The Community

Occasional articles in the local newspaper kept the community informed of program activities and plans. The local paper along with school district information provided excellent coverage of the Aurora Public School CPMP.

BUDGET

The total monies received for the program was $20,000.00 (12 months). These funds were provided by the U.S. Office of Education, Title III ESEA funds. Of this total amount, $2,300 went for professional salaries, $9,000 for teacher aides, $4,100 for in-service and writing teams, $500.00 for release time for project teachers, $1,850 for remodeling project schools, $1,500 for stipends for project teachers to attend project workshop and $750.00 for educational materials.

It should be noted that the CPMP project requested $69,577 from Title III but received only $20,000. With the monies for the project cut over half, some phases of the project will have to be reduced. It is the consensus of the steering committee that all objectives stated in the proposal will be met with the exception of objective 3 - to adopt present facilities to meet the physical and academic instructional needs of the program. This objective will only be met to a very limited degree due to lack of funds.

Based on the amount of funds received, the per pupil cost would be: $20,000 divided by the number of project students.

$$2500 \overline{)\,20{,}000.00}\quad \$8.00$$
$$20{,}000$$

Therefore, around $8.00 was the per pupil cost of students involved in the CPMP. The following is a detailed breakdown of the CPMP budget for 1972-73.

Name & Address of Agency	Grant Number	Budget Period (Mo., Day, Year) Beg.: End:

EXPENDITURE ACCOUNTS FUNCTIONAL CLASSIFICATION	Acct. No.	Salaries Professional	Salaries Non-Professional	Materials and Supplies	Contracted Services	Travel	Equipment	Other Expen.	Proposed Budget Totals	Negotiated Budget Totals
1	2	3	4	5	6	7	8	9	10	11
1. ADMINISTRATION	100	1,150.00					XXXXXXXXX XXXXXXXXX	50.00		1,200.00
2. INSTRUCTION	200	7,600.00	9,000.00	100.00	100.00	50.00	XXXXXXXXX XXXXXXXXX	1950.00		18,800.00
3. ATTENDANCE SERVICES	300						XXXXXXXX XXXXXXXX			
4. HEALTH SERVICES	400						XXXXXXXXX XXXXXXXXX			
5. PUPIL TRANSPORTATION SERVICES	500						XXXXXXXXX XXXXXXXXX			
6. OPERATION OF PLANT	600						XXXXXXXXX XXXXXXXXX			
7. MAINTENANCE OF PLANT	700						XXXXXXXXX XXXXXXXXX			
8. FIXED CHARGES (Except 830)	800						XXXXXXXXX XXXXXXXXX			
9. LEASING OF FACILITIES	830						XXXXXXXXX XXXXXXXXX			
10. FOOD SERVICES	900						XXXXXXXXX XXXXXXXXX			
11. STUDENT BODY ACTIVITIES	1000						XXXXXXXXX XXXXXXXXX			
12. COMMUNITY SERVICES	1100						XXXXXXXXX XXXXXXXXX			
13. SITE IMPROVEMENT	1210-0						XXXXXXXXX XXXXXXXXX			
14. REMODELING ($2000 or less)	1220-0						XXXXXXXXX XXXXXXXXX			
15. CAPITAL OUTLAY (Equipment only)	1230	XXXXXXX XXXXXXX	XXXXXXXX XXXXXXXX	XXXXXXX XXXXXXX	XXXXXXX XXXXXXX	XXXXXX XXXXXX		XXXXXX XXXXXX		
16. PAYMENT TO OTHER DISTRICTS	1600									
17. PROPOSED BUDGET TOTALS									20,000.00	XXXXXXXXX XXXXXXXXX
18. NEGOTIATED BUDGET TOTALS									XXXXXXXXXX XXXXXXXXXX	

Expenditure Account No. 200 Instruction

Expense Class	Name, Title Purpose or Item	Project Time Full	Project Time Part	Quantity	Salary, Rental or Unit Cost	Title III Budgeted Amount	Local Contributions
Salaries							
Professional	Project Director Bill McCurley		1 wk.	1	$ 300.00	$	$ 300.00
	Project Associate		1/2	1	2,300.00	1,150.00	
	Dan Colvin		1 wk.	1	250.00	250.00	
	Graphic Artist			1	$35/day	100.00	
Non-professional	Typist		2/3	1	3,600.00		2,400.00
	Teacher Assistants	X		3	3,000.00/yr.	9,000.00	
	Consultants		2 x 1/2 days		$100/day	100.00	
Materials and supplies							
	Testing Materials				500.00		500.00
	Library Materials				200.00		200.00
	Materials for Instruction				100.00	50.00	50.00
Travel							
	Local travel Director and Parcticum Teacher				100.00	50.00	
Total						10,700.00	3,450.00

Expenditure / Account No. 200 Instruction

Expense Class	Name, Title Purpose or Item	Project Time Full	Project Time Part	Quantity	Salary, Rental or Unit Cost	Title III Budgeted Amount	Local Contributions
Other Expenses:							
	Testing media and instruction packet					$50.00	$200.00
	Newsletter for District						100.00
	Computer time					100.00	300.00
	Printing charges:						
	Preparation of student learning packets			1,000			1,000.00
	Stipends:						
	New Teacher Workshop .			18	$15/day	1,500.00	
	Release time for teachers			18		500.00	
	In-service for teachers					4,100.00	
	Equipment needed for operation:						
	Elect. Ditto machines			2			1,500.00
	Punch and binder			1			
	Tape recorders			4			
	35 mm slide projectors			2			
	Typewriter			1			
	Thermo-fax			2			
Remodeling School				2		1,850.00	
	TOTAL					$8,100.00	$3,100.00
					GRAND TOTAL	$20,000.00	$13,003.00

Expenditure / Account No. 100 - Administrative

Expense Class	Name, Title Purpose or Item	Project Time Full	Project Time Part	Quantity	Salary, Rental or Unit Cost	Title III Budgeted Amount	Local Contributions
SALARIES:							
	Director, Bill McCurley Professional		1/3				$4628.00
	Dan Colvin, Project Associate		1/2	1	$2300.00	$1150.00	
	Non-professional Typist		1/3	1	3600.00		1200.00
MATERIALS AND SUPPLIES							
	Paper and office supplies				200.00		200.00
TRAVEL							
	1 out-of-state trip						125.00
	Mileage per diem						50.00
OTHER EXPENSES:							
	Administrative						100.00
	Dissemination Conference					50.00	
	Dissemination Brochure						150.00
	TOTAL					$1,200.00	$6,453.00

ON SITE EVALUATION SUMMARY

Project:	Continuous Progress Mathematics Program
School District:	Aurora Public Schools
Project Director:	Mr. William C. McCurley
Dates:	March 14 - 15, 1973
Evaluation Team:	Glyn H. Sharpe, Team Leader Jefferson County Schools
	Marvin Karlin University of Denver
	William E. Goe Denver Public Schools

Procedures:

The on site evaluation was initiated with a general procedures meeting with the team members on purposes and procedures for the visit. This was followed by a project overview.

An excellent on site evaluation document had been prepared by the project staff indicating evaluation procedures and data, dissemination procedures, and future plans. This was of great help to the team and they expressed several compliments regarding the care and effort that had been made preparing for the on site visit.

The overview was highlighted by a short tape-slide presentation, comments by project teachers from participating schools and general discussion. The tape-slide production was particulary well done.

The team visitiation on Thursday, March 15 included visits to North and West Junior High Schools, St. Pius School, and with Central office Administrators..

A post visit verbal summary with the project staff marked the final activity of the team.

All members of the team were appreciative of the preparations for the visit

by the project staff. The care and attention to the pre-visit information and the on site evaluation booklet indicated the extremely high commitment to the project that the team feels the project staff possesses.

The overall reaction of the team was very positive concerning the degree of commitment by the staff, the willingness to tackle a difficult assignment of changing an entire secondary mathematics curriculum and the amount of time and energy that the staff and teachers are exerting into the project effort.

Section II - Strengths, Weaknesses, Comments, and Recommendations

Since the number of schools was small, this part of the report was divided so that some of the findings could be made specific for individual schools and perhaps be more helpful through this kind of format. Divisions include:

A. Comments and recommendation applicable to all the project.

B. Comments for West Junior High School.

C. Comments for North Junior High School.

A. Comments applicable to all the Project

1. Strengths:

a. A major strength is the well qualified staff. This includes Dr. Nold whose knowledge and experience compliments both Mr. McCurley and Mr. Colvin.

b. The design and amount of dissemination is a strength. There seemed to be community acceptance at both schools.

c. The evaluation design and operation is a strength. The instruments and balance of cognitive and affective evaluation should yield maximum information concerning the output of the Project.

d. The degree of pupil awareness of the project and their support is impressive.

e. The liason with the Parochial schools is well established.

f. The level of district support to complement a project with inadequate funds was high. They are more than matching dollars supplied by the project.

g. There was an observable effort by the staff to work specifically towards stated objectives. This is particularly reflected in the evaluation design. A tremendous amount of materials have been produced on a shoestring budget.

2. Weaknesses

a. There are inadequate funds to support a project of this magnitude. The progress has been commendable in view of this serious limitation.

b. Although the managment system promotes pre-assessment, the practice has not been completely accepted by project teaching staff. The diagnostic part of the project needs strengthening.

c. Student record keeping has not been standardized.

d. Restrictions are present concerning course requirements for graduation. This may force an artificial ceiling on the commitment to actual continuous progress.

e. There are some indications of a lack of close cooperation between the project schools at West and North. This can probably be corrected by staff's special attention.

f. There is misunderstanding or non-agreement on what a continuous progress program is; in other words teachers are lax to let the kids go as far as they can go.

g. There does not appear to be any individual record where a child's placement of achievement is recorded, i.e. when a seventh grader reports in the fall as an eighth grader, he should be able to present evidence that he has accomplished 1275 and is ready for 1280 whether seventh or eighth grade sequence.

h. Materials were a real problem in having error free, adequate package for levels.

i. Facilities should be more adequate with class space, storage, and planning areas.

j. There should be more exchange and cooperation between the schools needed.

3. General Comments

a. Efforts to train teachers in systems management have been only partly successful. This should be a major emphasis in the immediate future.

b. Better placement tests need to be developed to place students into the program to accomodate the high mobility rate.

c. Since this represents a major emphasis towards changing a traditional program to continuous progress, attempts should be made to generalize the model to help other curriculum areas.

d. Efforts to use materials developed by others is commendable. This enables a small project staff to modify and adopt materials rather than make a complete commitment to development.

e. Plans were observed to be underway to commit all pupils to continuous progress next year with back to back scheduling.

f. Lack of media and manipulatives seem to cause some boredom. Although plans are underway, this component is largely lacking.

g. There is some danger of program only being a drill practice program.

B. Comments for West Junior High School

1. Strengths --

a. Teacher commitment to program.

b. Will make the 1975 -76 move to the middle school much easier.

c. Student awareness of the objectives of the program.

d. Evidence of department planning and ability to work together.

e. Proposed scheduling plan for next year with Math-Science 2 hour block back to back with team approval.

f. Students interact much more.

g. Teacher cooperation very much stronger.

h. Supportive, knowledgeable principal.

i. Student reactions primarily quite positive. Felt they were learning but also could socialize and interact more with their peers. Could get help from other teachers: open space.

j. Bright students truly moving ahead more rapidly.

k. Teacher strategies of instruction vastly changed, in the writer's opinion, positively.

l. Feeling among principal and math staff that program improvement is needed.

2. Weaknesses - West Junior High School

a. Slower students tend to lag behind and lack motivation.

b. Slower classes burden teachers far too much for efficient teaching in spite of aides.

c. Content and teaching strategies need attention. Lecturing to whole groups still present for some teachers. Drudgery at times because of constant individual work.

d. Paper work enormous; have abandoned profile sheet on each student.

e. Noise is troublesome in the open space area.

f. Open space area not utilized as well as could be.

g. Scheduling improvement needed and already planned for next school year.

h. Some misunderstanding of continuous progress.

i. Screening of basics out of the program. A true program will provide for them,

j. Grouping is sometimes by High - Middle - Low. If kids are moving at their own pace, should make no difference.

C. Comments for North Junior High Schools

1. Strengths (North Jr. High)

a. Student awareness of the objectives of the program.

b. Proposed back to back scheduling for next year of approximately three groups each period. Will help individualize the program.

c. Break in regimentation of teaching of lecture, etc.

d. Improved interaction between teachers, but minimal.

e. Brighter students profitting from C.P.

f. Improved scheduling planned for next year.

g. Large open space facility planned for next year.

h. Some teachers definitely have gained new, effective teaching strategies.

i. Even most disatisfied teacher sees progress, wants to keep trying.

2. Weaknesses (North Jr. High)

a. Teacher understanding and commitment to program.

b. Scheduling made program difficult. Also no large area for larger than class size groups to meet.

c. No uniformity of operation among teachers. All teachers are teaching by groups or units and restarting class every so often.

d. Definite feeling of isolation on part of math staff - not enough instruction.

e. Physical facilities make implementation very difficult; open area, normal space needed.

f. The Department Chairman is apparently not totaly committed

to continuous progress. Perhaps space and scheduling problems are partially responsible.

g. Possible inadequate placement of students is Algebra or Geometry.

h. There seemed to be some teacher disatisfaction perhaps evident from increase in negative progress reports.

i. Continuous progress not really implemented fully, students stopped often, kept together.

REPORTING THE EVALUATION

This report presents analysis and discussion of the data and information collected about the CPMP project during the 1972-73 school year. This information will permit judgment about the project to be made with a greater degree of confidence than if no systematic information were available.

The content of the report is organized around four general objectives of the project this year. The four objectives were:

1. To reorganize the present secondary mathematics program in Aurora Public Schools into a non-graded, continuous progress program with emphasis on diagnosis, prescription and implementation for fulfilling individual needs

2. To retrain teachers, counselors and administrators to meet the objectives of this mathematics program in the cognitive, affective and psycho-motor learning domains.

3. To adapt present facilities to meet the physical and academic instructional needs of the program.

4. To evaluate the non-graded continuous progress program.

In the CPMP for the school year 1972-73 about 2,500 students were involved and from that total group 275 students were randomly selected for testing. Five junior high schools were used in the testing phase of the program. Three junior high schools were used as the experimental group and two as the control group.

There were 275 students that took the pretest and 217 took the post test. 21% of the testing group did not take the post test due to dropouts from schools or in most cases moved to another school district. These students were not replaced in the post testing.

Measuring Changes

Several instruments were used to help measure changes in the CPMP. Science Research Associates or better known as SRA did furnish all achievement test and scored and analyzed all results. Project evaluator administered pre and post tests to all schools involved in the testing phase. The pretest was given in September and the post test in May. In other words, eight-tenths of the school year elapsed between testing.

Grades were compared when possible, between A, B, C's from 1971-72 school year to 1972-73 school year. Only one school had sufficient records to make comparisons. Other instruments such as check lists, observations, questionnaires, etc. were used to help in reporting results.

The CPMP did use semantic differential questionnaires and teacher-student questionnaires to measure attitude change in project teacher and students. The semantic differential was given twice during the year and the teacher-student questionnaires were given each quarter.

A visitor's questionnaire was used when local and non-local teachers visited our project schools and this information will also be used as input in evaluating the CPMP.

The data of relevance o the CPMP Goals are from the following sources:

1. Responses to a questionnaire given to workshop participants.
2. Indications of material usage.
3. Responses to teacher questionnaires.
4. Teacher attitude forms.
5. Student attitude forms.
6. Student performance data.
7. CPMP staff observation.
8. Comments from school administrators.
9. Evaluation report from State Title III Office.

OBJECTIVE I

1. To reorganize the present secondary mathematics program in Aurora Public Schools into a non-graded, continuous progress program with emphasis on diagnosis, prescription and implementation for fulfilling individual needs.

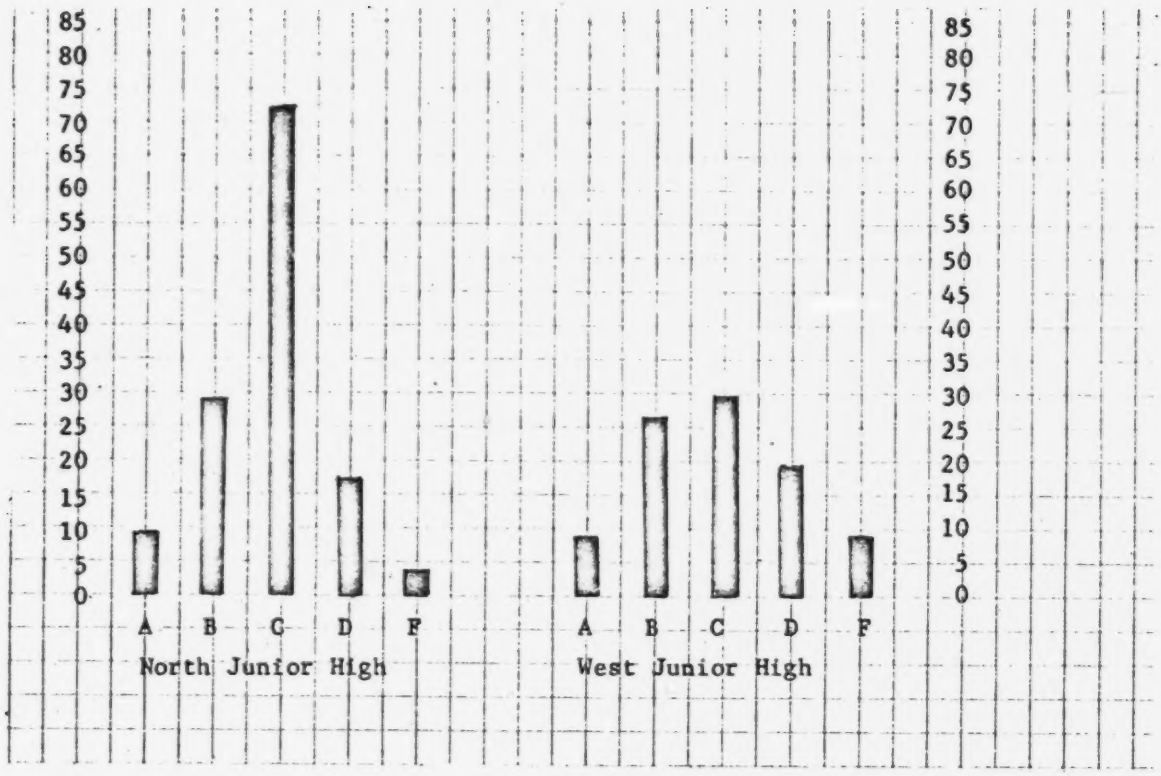
   This objective will be attained if:

   a. Student Objective - Each student will work and progress according to his own individual learning rate in a multi-media program starting in the sixth grade and continuing through the upper levels of the high school curriculum.

      Staff Objective - To impelement an open-ended multi-media, and individualized program to compensate for different learning rates.

Most classes in the CPMP were broken down into the following groups. Example: From a class of 30 students 5 were in the above average group and 10 in a below average group. The teachers by the use of several teaching strategies (small and large groups, etc.) had success with their students meeting the objective of the CPMP. Only 7.5% of 2000 students did not meet the objectives of the CPMP and will have to repeat the same objectives the next year. Many students in the 7.5% were unable to meet the CPMP objectives due to the absence from class many times during the year and never making an effort to finish their work. The following is a break-down of student grade for the school year 1972-73.

	North Junior High					West Junior High				
	Q1	Q2	Q3	Q4	Average	Q1	Q2	Q3	Q4	Average
A	6%	8%	14%	10%	9.5%	21%	14%	11%	11%	14.3%
B	34%	30%	30%	24%	29.9%	35%	29%	22%	22%	27%
C	38%	40%	34%	37%	72.3%	24%	32%	31%	29%	29%
D	16%	18%	14%	21%	17.3%	13%	18%	22%	25%	19.5%
E	2%	2%	7%	6%	4.3%	5%	6%	13%	12%	9%



One goal of many projects is to successfully have a favorable attitude change on the part of both teachers and students. From student and teachers attitude questionnaire (semantic differentials) this project has had a favorable attitude change. This favorable change was caused by several things:

1. More flexable "freedom" for both teachers and students.
2. Definite program objectives for students and teachers.
3. Many extra hours by project staff and project teachers improving the CPMP.
4. Support from administrators, project teachers, and students.
5. Strong financial support from the school district.
6. The will to make a program work.

The following questionnaire is used to support this favorable attitude change.

Name _____

School WEST JUNIOR HIGH SCHOOL

STUDENT QUESTIONNAIRE

Grades 6-12 Continuous Progress Mathematics Program

1. I enjoy mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	78%	12%	87%	13%	82%	18%	83%	17%

2. I have enjoyed this mathematics class more than previous mathematics classes.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	69%	31%	81%	19%	70%	30%	73%	27%

3. I feel more success in this mathematics class than in previous mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	66%	34%	77%	23%	69%	31%	70%	30%

4. Participation in this class has given me a more positive attitude toward school.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	51%	49%	64%	36%	59%	41%	62%	38%

5. I feel I have learned more in this mathematics class than in previous mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	70%	30%	84%	16%	77%	23%	80%	20%

6. I have completed my required work for this mathematics class.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	77%	23%	84%	16%	80%	20%	82%	18%

7. I ask questions when I don't understand certain concepts and ideas.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	87%	13%	84%	16%	94%	6%	90%	10%

8. I feel appropriate materials were used in this class.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	85%	15%	97%	3%	87%	13%	91%	9%

9. I feel that the teacher understands me and my mathematical needs.

YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	70%	30%	97%	3%	77%	23%	77%	23%

10. Do you enjoy working in Open Space? YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	72%	28%	84%	16%	71%	29%	75%	25%

11. What do you <u>like</u> best about your mathematics class?

12. What do you <u>dislike</u> most about your mathematics class?

13. What suggestions would you give to make your mathematics class a better class?

Name _____

School North Jr. High

STUDENT QUESTIONNAIRE

Grades 6-12 Continuous Progress Mathematics Program

1. I enjoy mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	73%	27%	88%	12%	87%	13%	86%	14%

2. I have enjoyed this mathematics class more than previous mathematics classes.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	68%	32%	78%	22%	80%	20%	80%	20%

3. I feel more success in this mathematics class than in previous mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	59%	41%	78%	21%	81%	19%	82%	18%

4. Participation in this class has given me a more positive attitude toward school.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	49%	51%	63%	37%	66%	34%	70%	39%

5. I feel I have learned more in this mathematics class than in previous mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	73%	27%	87%	13%	83%	17%	82%	18%

6. I have completed my required work for this mathematics class.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	73%	27%	83%	17%	80%	20%	80%	20%

7. I ask questions when I don't understand certain concepts and ideas.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	79%	21%	83%	17%	93%	7%	92%	8%

8. I feel appropriate materials were used in this class.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	83%	17%	92%	8%	84%	16%	83%	17%

9. I feel that the teacher understands me and my mathematical needs.

YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	74%	26%	88%	12%	81%	19%	79%	21%

10. Do you enjoy working in Open Space? YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No
	81%	19%	81%	19%	82%	18%	83%	17%

11. What do you <u>like</u> best about your mathematics class?

12. What do you <u>dislike</u> most about your mathematics class?

13. What suggestions would you give to make your mathematics class a better class?

b. Student Objective - To ensure each student will stay in the program at least one year or long enough to satisfy the requirements for high school graduation.

Staff Objective - To develop a program which will encourage each student to continue in the mathematics program until school graduation requirements have been met.

c. Student Objective - A student transferring into the system (Aurora has 30% turnover rate per year, largely military) will enter the program at his demonstrated achievement level.

Staff Objective - To better meet the needs of the inherent transient military population in Aurora (30% pupil turnover rate per year).

Data obtained from the "end of the year questionnaire", indicated that teachers were better able to:

1. Place their students on the CPMP continum.
2. Keep important data on each of their students by the use of student record cards.
3. Place students coming into the district.
4. Supplement their textbooks with CPMP materials.
5. Handle student "freedom".
6. Request help from project staff and building administrators.

The following is the end of the year questionnaire and the average of the total response given by the teachers.

CPMP - End of the year Questionnaire

1. What percent of the drop-outs did you have in your classes? 1%, 2%, 3%, 4%, 5%, (10%) 15%, 20%, 20%.

2. Did you have any students who completed the years course work before the end of the year? (Yes) or No. If yes how many ____?

3. Do you feel your students, in general, progress faster through the course work than in previous years? (Yes) or No.

4. Do you feel the students you had coming in after the school year began were more easily placed in the Mathematics program than in previous years? (Yes) or No.

5. What percent of the CPMP (Continuous Progress Mathematics Program) were useable this past year? 10%, 20%, 30%, 40%, (50%) 60%, 70%, 80%, 90%, 100%.

6. How much did you use the CPMP materials? 10%, 20%, 30%, (40%) 50%, 60%, 70%, 80%, 90%, 100%.

7. How much did you use the books? 10%, 20%, 30%, 40%, 50%, (60%) 70%, 80%, 90%, 100%.

8. How much did you use other materials (like mathematics laboratory materials, etc.)? 10%, 20%, (30%) 40%, 50%, 60%, 70%, 80%, 90%, 100%

9. Did you feel your students had more "freedom" in CPMP than in previous years? (Yes) or No.

10. Do you feel "freedom" is important in a CPMP? (Yes) or No.

11. Do you feel the Counselors were helpful to you in the CPMP this year? Yes or (No.)

12. Do you feel your principal was of help to you in CPMP this year? (Yes) or No.

During the school year several school districts, most from within the state and a few from outside, sent representatives to see the CPMP in Aurora Public Schools. Each participant was requested to fill out a questionnaire to help evaluate the project.

The teachers indicated the following:

1. A humanistic climate in the classroom.
2. Enthusiam for learning.
3. Good use of a teacher aide.
4. Very good relationship between teacher and student.
5. Involved teachers and students.
6. Happy students and teachers.
7. "Freedom" for both teachers and students.
8. Strongly committed teachers.
9. A strong indication that the project was meeting all goals with one exception.

Due to suggestions given by visiting teachers and information gathered from other questionnaires and observations, we were able to aide project teachers in the CPMP. Because of suggestions and additional input given by teachers, tremendous amount of help has been given in making the CPMP a success.

The following is the questionnaire given to each visiting teacher or administrator. The results obtained from the questionnaire has given additional support in answering objective one.

VISITOR'S QUESTIONNAIRE

Visitor's Name _____

Day Visited _____

Place Visited _____

Please make the following judgments as dandidly as possible, based on your observation today. Check only one box for each item; you may elaborate upon your response in the comment section for each item.

1. How did you view the humanistic climate in the classroom?

☐	24%	67%	9%	☐
Extremely humane and warm.	Above average humanism and warmth.	Average humanism and warmth.	Below average humanism and warmth	Extreme lack of humanism and warmth.

Comment:

2. How much "enthusiasm for learning" did you perceive in the classroom?

☐	24%	43%	29%	5%
Classroom activity dull and routine.	Enthusiasm not very noticeable; below average.	Average enthusiasm.	Enthusiasm quite notable; above average.	Classroom alive with exciting activity.

Comment:

3. How did you view the teacher/aide relationship in the classroom?

27%	67%	7%	☐	☐
Equality-based relationship with both parties helpful and supportive of the other's efforts.	Aides given considerable freedom and autonomy by the teacher.	Aides given freedom and autonomy sometimes; at other times not.	Aides usually under close teacher control and survaillance.	Aides clearly subservient to authoritarian teacher and somewhat resentful.

Comment:

[ ] Almost no rapport and communication between most students and teacher.	[5%] Rapport and communication between students and the teacher usually somewhat strained.	[25%] Average rapport and communication between most students and the teacher.	[50%] Rapport and communication between most students and the teacher usually very good.	[20%] Excellent rapport and communication between most students and the teacher.

Comment:

5. How did you view the materials being used in the classroom?

[ ] Materials dull and uninteresting to children.	[24%] Materials generally not very interesting to many children.	[57%] Materials about average in their appeal to most children.	[14%] Materials generally quite interesting to many children.	[5%] Materials highly interesting and even exciting for children.

Comment:

6. How did you perceiverthe personal involvement of the teacher in classroom activities?

[57%] Highly involved; engrossed in work with students and aides.	[38%] Usually involved and active in work with students and aides.	[5%] Sometimes involved; sometimes not.	[ ] Only occasionally involved and active in work with students and aides.	[ ] Duties performed but with an air of great detachment and pre-occupation.

Comment:

7. How did you perceiverthe personal involvement of the aides in classroom activities?

[6%] Highly involved; engrossed in work with students.	[50%] Usually involved and active in work with students.	[25%] Sometimes involved; sometimes not.	[19%] Only occasionally involved and active in work with students.	[ ] Duties performed but with an air of great detachment and preoccupation.

Comment:

8. How did you perceive the personal involvement of the students in classroom activities?

5%	19%	67%	10%	
Highly involved; deeply engrossed in activities.	Usually involved and active.	Sometimes involved; sometimes not.	Only occasionally involved and active.	Some participation but with an air of great detachment and preoccupation.

Com Comment:

9. How happy did the students seem?

5%	45%	40%	10%	
Most students visibly and markedly happy.	Most students seemingly happy much of the time.	Hard to tell; some happy and some not.	Most students seemingly unhappy much of the time.	Most students visibly and markedly unhappy.

Comment?

10. How happy did the teachers seem?

6%	61%	33%		
The teachers were visibly and markedly happy.	The teachers were seemingly happy much of the time.	The teachers were happy and unhappy about equally.	The teachers were seemingly unhappy much of the time.	The teachers were visibly and markedly unhappy.

Comment:

11. How did you view the physical appearance of the classroom

10%	50%	30%	5%	
Room organization clearly lends itself to the free, smooth movement of children.	Room organization tends to lend itself to the free, smooth movement of children.	Room organization seems average in most respects.	Room organization tends to impede students by being disorganized or overly organized.	Room organization clearly impedes students by being disorganized or overly organized.

Comment:

☐	☐	15%	35%	50%
Almost always stilted and artificial.	Often stilted and artificial.	Genuine and artificial about equally.	Often direct and genuine.	Almost always, direct and genuine.

Comment:

13. How freely were students allowed to move about and express themselves?

21%	32%	37%	11%	☐
Students very free and often encouraged to move about and express their original ideas.	Students moderately free and sometimes and sometimes encouraged to move about and express their original ideas.	Students sometimes free and encouraged; other times restricted and their thinking controlled.	Students moderately restricted and not often encouraged to move about and express their original ideas.	Students rigidly controlled and given almost no encouragement to move about and express their original ideas.

Comment:

14. The following are project goals to be met. Please respond to the degree you feel the goals are being met, as determined by your visit.

G	1	37%	YES	37%	Yes	26%	yes		no		No		NO
G	2	5%	YES	40%	Yes	45%	yes		no	5%	No	5%	NO
G	3		YES	32%	Yes	53%	yes	5%	no	10%	No		NO
G	4	10%	YES	33%	Yes	48%	yes	10%	no		No		NO
G	5		YES	11%	Yes	56%	yes	11%	no	11%	No	11%	NO
G	6	20%	YES	40%	Yes	40%	yes		no		No		NO
G	7	25%	YES	12%	Yes	38%	yes		no	25%	No		NO
G	8		YES	30%	Yes	50%	yes	10%	no		No	10%	NO

CPMP GOALS

1. To meet individual needs ofsstudents inaa CPMP.
2. To develop a model for implementation of a CPMP.
3. To develop a model for the use of aides in a CPMP.
4. To correct and field-test materials and test in a CPMP.
5. To develop learning centers in each classroom area.
6. To adopt present facilities to better meet the needs of the CPMP.
7. To develop a model to inform counselors and administrators of the goals of a CPMP.
8. West - To develop a model for individualized instruction in the open space concept.
   North - To develop a model for individualized instruction by flexable grouping.

d. Student Objective - Each student will continuously progress, using existing materials adapted to this program as well as newly prepared materials.

Staff Objective - To adapt and utilize new and existing materials to meet the needs of the district in a continuous progress program

Project teachers did feel that 65% of the CPMP materials that were useable and did support text books. Careful and pain taking efforts were used this summer adding to and improving existing CPMP materials. The additional materials developed will be sufficient to meet all present District mathematics objectives.

e. Student Objective - Each student will apply mathematics from a problem-solving approach to other educational disciplines and to the world at large.

Staff Objective - To apply mathematics from a problem-solving approach to other educational disciplines and to the world at large.

From the very beginning of the project one of the major emphasis was to use the problem-solving approach to mathematics. Much of the CPMP materials do use and support this approach.

f. Student Objective - Each student will actively participate in the mathematics program through freedom in the use of independent and group learning centers and multi-media.

Staff Objective - To provide for full student participation by allowing each student freedom in the use of independent and group learning centers and multi-media.

Students did express through their questionnaire that they did enjoy the "freedom" and the "independence" that was given to them. The project teachers also expressed that it was necessary to have "freedom" in a CPMP.

Many visitors from our school district and from other school districts visited the CPMP and were asked to respond to several questions pertaining to the CPMP. The only area they felt needed improvement was the learning centers and the use of multi-media. Much effort and financial assistance will be given this next year to better meet this objective.

g. Student Objective - Each student will demonstrate progress on a performance criteria basis.

Staff Objective - Development of student progress evaluation based on performance criteria (cognitive, affective and psychomotor).

The project is very pleased to report that significant amounts of growth were made during the year. 275 radomly selected students were used for pre and post testing of the CPMP. Three different Junior Highs were used as the experimental schools and two Junior highs as the control schools.

The experimental schools did show a greater amount of growth in the eight month period than did the control schools. Average gain for the experimental schools was 1.9 years growth during the eight month period and 1.3 years growth for the control schools for the same period of time.

GAINS IN MEAN MATHEMATICAL AGE
BY PUPILS IN THE CPMP

SRA ASSESSMENT SURVEY (ACHIEVEMENT SERIES)

EXPERIMENTAL SCHOOLS	GRADE	PRETEST N(275)	POSTTEST N(225)	GAIN IN 8 MOS.
North Junior High	7th	7.2	8.5	1 Year 3 Mos.
North Junior High	8th	7.1	8.2	1 Year 1 Mos.
North Junior High	9th	10.4	12.1	1 Year 7 Mos.
West Junior High	7th	7.1	7.9	8 Mos.
West Junior High	8th	8.1	9.8	1 Year 7 Mos.
West Junior High	9th	9.5	10.5	1 Year
St. Pius Junior High	7th	8.3	9.2	9 Mos.
St. Pius Junior High	8th	9.5	10.3	8 Mos.
CONTROL SCHOOLS				
East Junior High	7th	7.1	7.8	7 Mos.
East Junior High	8th	8.8	10.5	1 Year 7 Mos.
East Junior High	9th	9.7	9.8	1 Mos.
South Junior High	7th	7.9	9.4	1 Year 5 Mos.
South Junior High	8th	8.1	9.8	1 Year 7 Mos.
South Junior High	9th	10.6	10.6	0 Mos.

EXPERIMENTAL SCHOOLS	GRADE	NATIONAL PERCENTILE SCORES PRETEST	POSTTEST
North Junior High	7th	50	63
North Junior High	8th	30	53
North Junior High	9th	63	72
West Junior High	7th	46	53
West Junior High	8th	49	63
West Junior High	9th	54	61
St. Pius Junior High	7th	69	70
St. Pius Junior High	8th	65	66
CONTROL SCHOOLS			
East Junior High	7th	46	51
East Junior High	8th	57	69
East Junior High	9th	56	53
South Junior High	7th	62	73
South Junior High	8th	49	64
South Junior High	9th	65	61

2. To retrain teachers, counselors and administrators to meet the objectives of this mathematics program in the cognitive, affective and psycho-motor learning domains.
   This objective will be attained if:
   a. Teacher Objective - Each teacher will be teaching in the areas of mathematics in which his greatest strengths have become evident.

      Staff Objective - Teaching strategies for better utilization

   b. Counselor and Administrator Objective - Each counselor and administrator will be familiar with the mathematics program in order to assist students in adjusting to the program.

      Staff Objective - A model for orienting counselors and administrators to their role in the program will be developed.

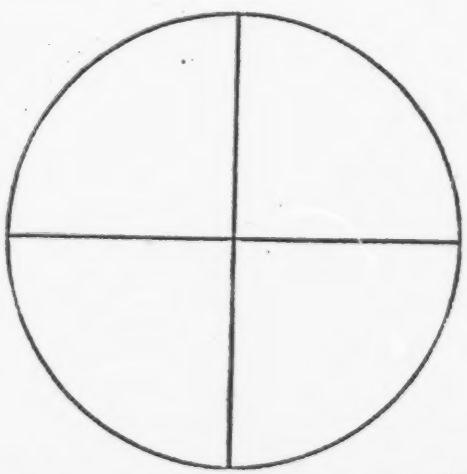
Great effort and expense was used to help facilitate this objective. Three full workships (30 hours each) were held for project teachers in an effort to help train teachers for implementing a CPMP. Change is always hard to accomplish and this program was no exception. Most of the participating teachers liked and accepted the ideas for a CPMP very quickly and a few were reluctant. Different degrees of success were achieved with the teachers during the school year but all agreed that they were able to do a better job of teaching their students because they were forced to look very closely at their activities thus better informed and better able to meet their difficulties.

Care and hard work were given to retraining counselors and administrators toward the CPMP. Several luncheons and formal presentations were given during the year in an effort to inform each participant of ideas and materials used in a CPMP. The following questionnaire was used to evaluate the understanding obtained from counselors and administrators.

EVALUATION

1. Now that you have been informed about the CPMP in the Aurora Public Schools, choose four words that express your attitude toward this program. Place one word in each quadrant of the circle.

2. Choose the word which expresses your strongest feeling and use that word in a sentence.



3. To adapt present facilities to meet the physical and academic instructional needs of the program.

This objective will be attained if:

a. School Building Objective - Present buildings will be renovated to accommodate open-space learning centers, independent study areas, testing centers, teacher workareas, and storage areas.

b. Student Objective - Each student's records will be recorded and available in the retrieval system of the district owned computer.

Staff Objective - Present district owned computers will be adapted to accommodate a pupil record retrieval system.

Due to lack of funds from Title III ESEA this goal was only met to a small degree of success. Plans had been made to adapt facilities to meet the instructional needs of the CPMP. The school district did do some remodeling at West Junior High School (9,000 dollars) and from reaction from teachers at the school and by visiting teachers because of this remodeling the CPMP had greater flexability for the teacher and student. This goal will be met but will take a longer period of time.

4. To evaluate the non-graded continuous progress program.
This objective will be attained if:

a. Staff Objective - A model will be developed for evaluating the program based on student performance and progress.

b. Staff Objective - A model will be developed for evaluating the effectiveness of the organization of the materials.

c. Staff Objective - A model will be developed for evaluating the effectiveness of the use of certified and classified personnel within the mathematics program.

From all sources used this year for the evaluation of the CPMP this writer would conclude this objective has been met with one exception. Teacher expressed that the diagnostic testing phase be improved for the next year.

Evaluation is very important to the growth and analysis of a program and efforts will be continued to improve the evaluation model every year.

APPENDIX

I. Brochure Defining the Activities of the CPMP

II. Evaluation Instrument

A. Student Instruments
   1. Student Semantic Differential Questionnaire
   2. Student Questionnaire Given Each Quarter
   3. SRA Achievement Test

B. Teacher Instruments
   1. Teacher Semantic Differential Questionnaire
   2. Teacher Questionnaire Given Each Quarter
   3. Teacher Workshop Questionnaire

C. Other Instruments Used in Evaluating the CPMP
   1. Visitor's Questionnaire
   2. Administrator's Questionnaire

CONTINUOUS PROGRESS MATHEMATICS is a pilot curriculum project designed to meet the individual needs, abilities, and interests of average and above average students in 6th through 12th grade mathematics. The project is being funded cooperatively by Aurora Public Schools and the U.S. Office of Education under provisions of Title III of the Elementary and Secondary Education Act.

12

INDIVIDUALIZED LEARNING

For several decades, educators have discussed the need for more individual instruction within the mathematics curriculum. Unfortunately, there has been only limited progress in tailoring math programs to meet individual student needs.

Pilot programs in Continuous Progress Mathematics underway this year at North and West Junior High Schools (grades 7-9) are giving teachers an opportunity to prepare new teaching materials and explore more individualized instruction methods.

At both schools, the pilot programs are built around large and small group instruction and close teacher supervision. Students progress through a series of objectives according to their own abilities and are tested for mastery of each objective before moving on to the next. Learning units vary from 2 or 3 days to more than a week depending on the skills involved.

Frequent checks on student progress through testing and close supervision made possible by small groups help insure that no child's problem will be overlooked.

6 X

PROBLEM SOLVING APPROACH

Planning sessions for the program included teachers from other subject areas, since a prime goal is to show students how math skills may be used in other areas of study. An attempt is also being made to put mathematics into the "real world" by introducing practical problem solving situations. Commercial and teacher-made puzzles and games involving the use of math skills are used to supplement texts and special materials prepared by the teachers.

OPEN SPACE

At West Junior High, an open-space area was developed as part of the pilot program. Teaching large groups within an open area, then reorganizing into several small groups results in more efficient use of space and teacher skill. The open-space setting requires a high degree of planning and cooperation among members of the teaching team.

MODEL FOR TEACHING

The purpose of the pilot programs in Continuous Progress Mathematics is to develop a model that could be implemented in other schools in the Aurora District. The model will include instruction techniques, scheduling, sequence of study, use of teacher aides, and use of space a... (as at North) a more traditional

classroom setting. Experience here will help to reshape the theory and practice of individualized math curriculums.

For the Aurora School System, Continuous Progress Mathematics might also help solve problems caused by a large annual pupil turnover. Entering students could be placed more accurately within the series of objectives than in the present more rigid structure.

The program has been well received by both students and instructors. Students at both schools were polled and favored the program by a 3 to 1 margin.

Student and teacher enthusiasm for Continuous Progress Mathematics has already been reflected in a significant improvement in overall math achievement. The failure rate for the first quarter 1972 was 9% lower than first quarter 1971.

CONTINUOUS

PROGRESS

MATHEMATICS

For More Information Contact:

William C. McCurley,
Mathematics Consultant
Adams-Arapahoe District 28-J
1085 Peoria Street
Aurora, Colorado 80011

Name _____

School _____

Date _____

Age _____

ng Man ☐

ng Woman ☐

dent Semantic Differential Questionnaire -- Continuous Progress Mathematics Program

1. Mathematics
2. My School
3. Myself
4. Teacher Aides
5. My Mathematics Teacher
6. Individualized Mathematics Program

Mathematics

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

My School

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Myself

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Teacher Aide

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

My Mathematics Teacher

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Individualized Mathematics Program

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Name _____

School _____

STUDENT QUESTIONNAIRE

Grades 6-12 Continuous Progress Mathematics Program

1. I enjoy mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

2. I have enjoyed this mathematics class more than previous mathematics classes.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

3. I feel more success in this mathematics class than in previous mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

4. Participation in this class has given me a more positive attitude toward school.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

5. I feel I have learned more in this mathematics class than in previous mathematics classes. YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

6. I have completed my required work for this mathematics class.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

7. I ask questions when I don't understand certain concepts and ideas.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

8. I feel appropriate materials were used in this class.
YES Yes yes no No NO

	Q1		Q2		Q3		Q4	
Comment:	Yes	No	Yes	No	Yes	No	Yes	No

9. I feel that the teacher understands me and my mathematical needs.
YES Yes yes no No NO

Q1 Q2 Q3 Q4

Comment: Yes No Yes No Yes No Yes No

10. Do you enjoy working in Open Space? YES Yes yes no No NO

Q1 Q2 Q3 Q4

Comment: Yes No Yes No Yes No Yes No

11. What do you <u>like</u> best about your mathematics class?

12. What do you <u>dislike</u> most about your mathematics class?

13. What suggestions would you give to make your mathematics class a better class?

Name_____

School_____

Date_____

Teacher Semantic Differential Questionnaire -- Continuous Progress Mathematics Program

	PRE	POST
1. Mathematics		
2. My School		
3. Continuous Progress Mathematics Program		
4. Teacher Aide		
5. Myself		
6. My Students		

Mathematics

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

My School

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Continuous Progress Mathematics Program

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Teacher Aide

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Myself

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

My Students

Good	____	____	____	____	____	Bad
Dull	____	____	____	____	____	Interesting
Fun	____	____	____	____	____	Boring
Worthless	____	____	____	____	____	Useful

Name _____

Date _____

Teacher Questionnaire

Grades 6-12 Continuous Progress Mathematics Program

1. Do you feel this program is meeting the needs of your students?
   YES; Yes; yes; no; No; NO
   Comment:

2. Do you understand the education ideas of the program?
   YES; Yes; yes; no; No; NO
   Comment:

3. Do you feel you have good cooperation from:

Department Teachers	YES;	Yes;	yes;	no;	No;;	NO
Dan Colvin	YES;	Yes;	yes;	no;	No;	NO
Bill McCurley	YES;	Yes;	yes;	no;	No;	NO
School Principal	YES;	Yes;	yes;	no;	No;	NO

   Comment:

4. Do you feel the materials are adequate for the Mathematics Program at your school?
   YES; Yes; yes; no; No; NO
   Comment:

5. Do you feel your students are learning more mathematics this year than last year?
   YES; Yes; yes; no; No; NO
   Comment:

6. Do you feel the aides are saving you a lot of time which is used in extra preparation and instruction?
   YES; Yes; yes; no; No; NO
   Comment:

7. Do you feel the district has given adequate support for the development and implementation of the program?
   YES; Yes; yes; no; No; NO
   Comment:

8. In your opinion, what percent of your mathematics class has enjoyed this year's mathematics more than last year's?
   10%; 20%; 30%; 40%; 50%; 60%; 70%; 80%; 90%
   Comment:

9. How much favorable attitude change toward mathematics has taken place in your class?
Some; A lot; None
Comment:

10. What percent of your mathematics students did achieve the minimum requirements on prepared units?
10%; 20%; 30%; 40%; 50%; 60%; 70%; 80%; 90%
Comment:

11. Do you feel an increase in confidence in the ability to do mathematics has been evident in your classes? What percent?
10%; 20%; 30%; 40%; 50%; 60%; 70%; 80%; 90%
Comment:

12/ In your opinion as a teacher, how do you honestly feel your attitude toward the continuous mathematics program has changed?
Favorable Change----------Some; A lot; None
Unfavorable Change----------Some; A lot; None

13/ Do you feel you would like to continue working with the Continuous Mathematics Program and under what conditions?
YES; Yes; yes; no; No; NO
Conditions:

14. What do you feel is the greatest change in your classroom procedure this year?

15. What is the major complaint about the materials?

16. How much success did you have, in your opinion, with individualizing with your classes?
Some; A lot; None
Comment:

17. Do you feel the aides are meeting the needs of the project?
Dorine:
Comment: YES; Yes; yes; no; No; NO

Jill or Diane:
Comment; YES; Yes; yes; no; No; NO

Carol:
Comment: YES; Yes; yes; no; No; NO

Lisa:
Comment: YES; Yes; yes; no; No; NO

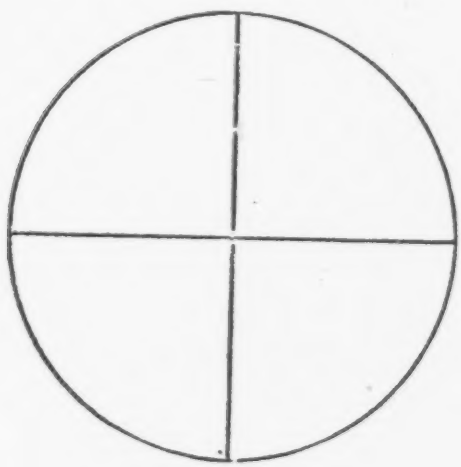
If you please, a short summary about the school year this far, as to the success or failures of the Mathematics Program. (on back or a separate sheet)

If you please, a short summary about the school year this far, as to the success or failures of the Mathematics Program. (on back or a separate sheet)

EVALUATION

1. Now that you have been informed about the C.P.M. P. in the Aurora Public Schools, choose four words that express your attitude toward this program. Place one word in each quadrant of the circle.

2. Choose the word which expresses your strongest feeling and use that word in a sentence.



Teacher's Name_____

School_____

Date_____

Teacher's Questionnaire on Continuous Progress Mathematics Program I

I. Give your definition of the following terms:

A. Individualized Instruction.

B. Discipline in a Continuous Progress Mathematics Program.

C. Continuous Progress Mathematics Program.

II. I do do not approve of Individualized Instruction as previously defined by me. (Circle One)

Please Comment:

III. Suggestions for the Continuous Progress Mathematics Program for the coming year.

Teacher's Name_____

School_____

Date_____

Teacher's Questionnaire on Continuous Progress Mathematics Workshop II

1. During the week I received sufficient information about the Continuous Progress Mathematics Program.

   Yes No

   Please Comment:

2. After the workshop I have a better understanding of the meaning of:

Individualized Instruction	Yes	No
Discipline	Yes	No
Continuous Progress Mathematics Program	Yes	No

   Please Comment:

3. I would rate the workshop as:

   Excellent Good Fair Poor

   Please Comment:

4. Do you feel comfortable with the program as presented?

   Yes No

   Please Comment:

5. Do you feel you will be able to better meet the needs of your students by using the philosophy and materials of the Continuous Progress Mathematics Program.

Yes No

Please Comment:

6. What needs do you anticipate for the coming year to make it successful?

7. Do you feel the Continuous Progress Mathematics Materials will meet your needs?

Yes No

Please Comment:

8. Rate the materials as:

Excellent Good Bad